JUNE 11, 1951 NEWS ISSUE

Electrical World

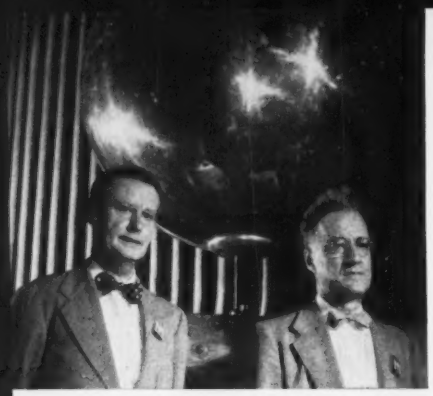
Price 35 Cents

A McGRAW-HILL PUBLICATION

Edmund W. Oesterreich, developer of pole-top resuscitation honored by EEI

Westinghouse Lab Takes Micrometer's Measure..... Page 16

Industrial Production to Soar..... Page 30



Well known for their contributions to lightning arrester development and high voltage research are J. H. Hagenguth and Dr. K. B. McEachron. They are standing before part of a "sphere-gap" measuring device.

G-E Thyrite station-type arrester is subjected to successive lightning discharges of 7,500,000 volts in the High Voltage Laboratory. These facilities test the accuracy of lightning arrester characteristics.

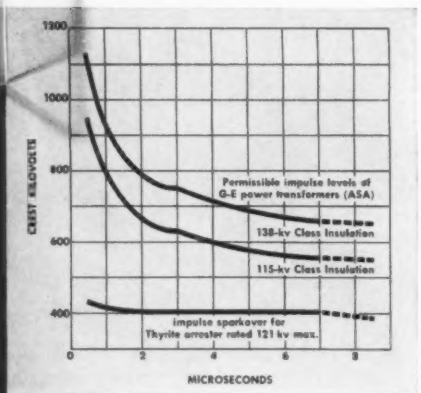


Chart shows how Thyrite arresters assure adequate protection, permitting one-step reduction (138 kv to 115 kv) in transformer insulation level.

J. R. Meador, of G.E.'s Power Transformer Engineering Division (right), points to transformer shielding that controls distribution of voltage stress and helps make possible a reduction in transformer insulation level. Arrester engineers W. J. Rudge and H. M. Towne are at the left.

How strong should a transformer be?

From the standpoint of reliability or performance, power transformers can never be too strong. But they can be more economical when the purchaser specifies a design that is not in excess of operating requirements.

Here's an example: Insulation, dictated by impulse voltages that can reach the windings, is an important cost factor in a typical power transformer. Limit those impulse voltages, and insulation levels can be reduced, cost savings effected.

Thanks to modern Thyrite* station-type lightning arresters, with positive, known characteristics, impulse voltages *can be limited.* Together with the use of effective transformer shielding, this protection permits a one-step reduction in the basic insulation level of the transformer. And the result, in the case of a 138-kv transformer, for example, is a saving in cost to the purchaser of some ten or eleven per cent.

The exacting tests on transformers and lightning arresters that pointed the way to this reduction in insulation levels were made in the General Electric High Voltage Engineering Laboratory, where research not only helps make better equipments, but also contributes to lower costs, lower system investments. General Electric Company, Schenectady 5, N. Y.

Reg. Trademark of General Electric Co.

MORE POWER TO AMERICA

GENERAL ELECTRIC

361-207

The Electrical Week

INDUSTRY MOBILIZATION—CMP, to go into effect July 1, won't cover materials needed by utilities for at least another three months (p 4) . . . Five provisions of National Production Authority's recent amendment to Regulation 4 of interest to utilities are listed on Page 4.

WASHINGTON—Supreme Court's decision in the color television controversy favors CBS, but leaves some questions unanswered (p 11) . . . The High Court refuses to review NLRB's decision in the West Texas Utilities case, to the effect that AFL officers did not have to sign non-Communist affidavits (p 14) . . . Two Bureau of Reclamation missions have been sent to Central America to study electric power possibilities under the Point 4 program (p 14).

ELSEWHERE—Georgia Power Co wins Coffin Award for its Champion Home Town Contest. Presentation is made at EEI Convention in Denver (p 5) . . . Opportunities are decreasing for further improvement of efficiency of power production and distribution, EEI Electrical Equipment Committee is told in Los Angeles (p 12) . . . European power supply has improved, according to a report released by the UN (p 13) . . . Private interests are reported negotiating for the purchase of Washington Water Power Co properties in Idaho (p 20) . . . Industrial production expected to soar in the second half of 1951, with big power users stepping up activity because of defense orders (p 30).

• • •

Electrical appliance prices were among the first to take a big dip when New York City department stores started a price war. The stores have wanted to slash prices for a long time but were prevented by the state's fair trade law. The U. S. Supreme Court recently said merchants didn't have to obey it if they have not signed fair trade agreements.

Westinghouse Electric Corp and the International Union of Electrical Workers, CIO, signed a wage agreement last week that averted a strike scheduled to begin today. The agreement, covering 50,000 workers in 22 plants, provided for a wage increase of 9¢ an hour. In the event the increase is not approved by the Wage Stabilization Board, however, company and union must come to another agreement by July 16 to avert another strike threat.

The Public Utilities Advertising Association has increased its membership to 365.

Steel companies are becoming alarmed at the threat of peacetime competition from the subsidized aluminum industry.

To women the controversy between gas and electricity as a fuel for cooking is far more important than that between private and public power for operation of electric utilities.

While electric utilities are fighting hard to stave off public ownership, more and more transportation companies are being taken over—most by municipalities.

Sen Robert A. Taft has accepted an invitation to speak at the dedication of the Minn-Kato Power Cooperative generating station at Bismarck, N. D., the week of Sept. 16.

Increasing demands for electric power should be a tip-off to coal-consuming utilities to increase their coal stockpiles. The price of coal isn't likely to decrease.

April production of television receivers was 36% below the monthly rate established in the first quarter of the year, Radio-Television Manufacturers Association reports. Output of radio sets fell 5%. During April 1,337,042 radios and 469,157 TV sets were manufactured, compared with the quarterly monthly average of 1,411,866 radios and 733,223 television receivers.

Notes From The News

Tons of water crashing over the temporary coffer dam upstream from McNary project on the Columbia River has slowed excavation work at the dam site. High water brought the river at one point to a depth of 107 feet. The coffer dam at that point is 100 feet above bedrock . . . Water most likely will not get over the Bhakra-Nangal dam in the Punjab, India. When completed, it will be 680 feet high—world's highest and third largest dam. The hydro project will dam the Sutlej River as it emerges from a narrow gorge at the foot of the Himalayan Shiwalik range of mountains . . . Survivors of Mrs. Ona Mae Bearden, who died in Little Rock July 7, 1948, have been awarded a $2,000 consent judgment in her death against Arkansas Power & Light Co. Plaintiffs claimed "excessive voltage" fed through AP&L service lines electrocuted Mrs. Bearden in her home when she came in contact with a radio.

CLINTON T. HURD, formerly with public utility districts in the state of Washington, is chief of the Material and Equipment Requirements Branch, Depa

CLARENCE E. HARTAY, who is now with the Materials and Equipment Requirements Branch of Defense Electric Power Administration in Washington

CMP Will Not Cover All Materials Needed by Utilities for Some Time

Washington's mobilization agencies were losing their race against time this week to mesh material requirements of the electric utilities with the upcoming Controlled Materials Plan.

CMP is slated to go into effect July 1. But it won't cover all the material needs of utilities for some time thereafter—probably for another three months. But the delay is strictly procedural. It should not seriously affect either the expansion plans or the day-to-day operations of the industry.

Major problem facing the controls agencies is how to handle utility construction projects. It was obvious that CMP Regulation 6 and CMP Form 4-C, covering all types of construction, would not be ready in time to cover third-quarter construction of the utilities. It would take at least a month to get the 4-C forms out to industry, have them returned, and processed in Washington.

Solution here appeared to be a third-quarter exemption for utility construction, with Defense Electric Power Administration continuing to issue DO-48's for utility projects in the usual manner. Sometime after July 1, Depa could issue CMP allotment symbols to DO-rated construction projects. During the July-October quarter utilities with DO-48's would fill out 4-C applications covering their construction requirements for the fourth quarter.

There was some question this week as to what agency would handle 4-C applications, however. Preliminary drafts prepared by the National Production Authority called for all forms to be returned to NPA. Whether or not NPA will instruct electric utilities to return the forms directly to Depa or will receive all 4-C forms itself initially had not been decided.

Meanwhile, manufacturers of electrical equipment were getting their materials requests to NPA's Engine and Turbine Division and Electrical Equipment Division in good shape. Officials of both divisions said they had the job of processing these requests well in hand.

The manufacturers are filing two types of CMP applications, the 4-A and 4-B forms. The 4-A forms cover copper, steel, and aluminum requirements for items fabricated to specifications by the metals suppliers, like turbine shafts and large castings. The 4-B forms cover materials needed for stock items, like bolts.

So output of generating equipment, switchgear, and the like will be under CMP allotments by July 1 or shortly thereafter. These allotments, of course, will be measured against electric utility requirements to make certain that equipment will be available on time for programmed projects of the utilities.

Depa was planning to step up its preparation of the industry's fourth-quarter metals requirements. Administrator Clifford B. McManus asked all utilities to speed new or revised fourth-quarter copper, steel, and aluminum needs to Depa so that agency could total them up by mid-June.

At the same time, Depa simplified the procedure followed by utilities needing assistance in obtaining critical materials. The changes were incorporated in an amendment of Depa's EO-2 order.

Major revision was elimination of the requirement on utilities to furnish letters from manufacturers verifying the need for procurement assistance. But utilities must furnish current construction schedules for each project in quadruplicate, along with requests for assistance. Changes in construction schedules are also required by Depa as they occur.

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NPA Reg 4 Amendment Changes MRO Priorities

Five provisions of National Production Authority's recent amendment of its Regulation 4 are of direct interest to electric utilities. The important changes in the order governing priorities for maintenance, repair, and operating supplies follow:

1. Increase of 20% of the quota for which DO-97 ratings may be used for MRO. The increased quota may be applied immediately to the second quarter of 1951.

2. There is no longer any ceiling on expenditures for MRO supplies obtained without use of a rating, provided ratings are used for no more than 20% of the amount used in the base period. But records must still be kept of all MRO supplies ordered or received.

3. Use of DO-97's for minor capital additions is limited to 10% of the MRO quota during any quarter, or $750, whichever is greater.

4. DO-97's may not be used to obtain operating supplies in excess of the general limitation on inventories—60 days' supply.

5. DO-97's cannot be used to obtain supplies on lease.

Georgia Power Wins Coffin Award

'Champion Home Town Contest' Sponsored by Company Is Singled Out as an Important Aid to Community Betterment in its Service Area

For giving "important assistance and motivation to community betterment" in its service area.

That simple reason was given last week as explanation of why Georgia Power Co was entitled to the Charles A. Coffin Award for 1950. But there were some in the audience at the Denver convention of Edison Electric Institute, where the award was presented, who knew the reason was not a simple one. They knew the award was only industry recognition for a job that began in 1944 and is still incomplete.

A Better Place to Live

The job still sounds simple—on paper. All that Georgia Power wanted to do was make Georgia a better place to live. This is an objective that practically every person in the state favored. The trick was to make them do something about it, to make the people act together to help themselves. And Georgia Power performed the trick by furnishing the incentive and leadership.

After several promotion plans were tried, the vehicle finally selected to carry the burden was the Better Home Town Contest, now called the Champion Home Town Contest. A community development division was formed by the company. It drew up not only the rules for the contest but also the plan of action that would make it a simple matter for towns to organize, discover their flaws, and correct them.

Room for Improvement

Georgia towns, like those in the other 47 states, have much room for improvement. But there is usually considerable disagreement as to what is wrong. To eliminate this problem the company provided an analysis booklet which local committees could use in finding flaws in their communities. The booklet was so complete that one using it would have trouble not finding some fault with heaven. This booklet is still the basic guide for community analysis. Many other utilities and organizations have borrowed it in whole or in part to check their own communities.

The 1951 booklet has 22 sections: Public squares and parks, streets and sidewalks, highways and roads, rail-

JUDGES study entries in Georgia Power's 1951 Champion Home Town Contest. Left to right, Dr. K. Frances Scott, Smith College; James Gray, publisher, Albany (Ga.) Herald; Charles Murchison, board chairman, Capital Air Lines; Mrs. J. C. Blalock, League of Women Voters; and M. D. Mobley, Georgia Dept of Education

June 11, 1951 ELECTRICAL WORLD Vol. 135, No. 24
Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y. Executive, Editorial and Advertising Office: McGraw-Hill Building, 330 W. 42nd St., New York 18, N. Y.** Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Electrical World—Subscription Service. 99-129 N. Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 18, N. Y. Allow ten days for change of address.

Please indicate position and company connection on all subscription orders.

Single copies 35¢. For the United States and possessions $6 a year, $9 for two years. Canada, $7 for one year, $11 for two years, $14 for three years. (Canadian money, at par.) Pan-American countries, $15 for one year, $25 for two years, $30 for three years. All other countries $20 for one year, $36 for two years, $49 for three years. Entered as second class matter, November 16, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in USA. Copyright 1951, by McGraw-Hill Publishing Company, Inc. Permission required to reproduce any of contents.

road facilities, bus stations, airfield service, municipal utilities, public utilities, public buildings, health facilities, educational institutions, tourist trade, municipal recreational facilities, other recreational facilities, organizations, religious institutions, housing and residences, factories and industrial plants, agricultural trade, stores and shops, professional services, and service establishments.

Each section consists of a number of pertinent questions, most of which can be answered by yes or no or by a checkmark. A quick scanning of the answered questions points out the town's deficiencies.

Citizens Form Committee

To get citizens to eliminate these the company suggests that a general committee be formed. This committee is advised to name 12 other committees: Beautification, municipal development, tourist, recreation, education, health and sanitation, business and industry, agriculture, advertising and publicity, transportation, religious welfare, and youth.

Since towns as small as 300 in population compete, it is easily seen that if such a town should have the entire 13 committees, practically every adult would be a committee member. But as Georgia Power says, "many hands make work light."

To show the need for such a contest and to explain in part its success, it is necessary to give some background on conditions in rural sections of the state.

Conditions Were Bad

In 1941 a survey of a typical (word quoted from Georgia Power literature) Georgia county revealed 61% of the dwellings were without a coat of paint, 21% were not ceiled, 25% had no window panes, 36% lacked screens. But 75% had from one to four hound dogs.

Conditions such as these are hardly conducive for increasing the usage of electricity or the sale of electrical appliances.

Besides, economic conditions were on the slide. The dollar value of the state's agriculture products, exclusive of livestock, was about $536,540,000 in 1919, only $141,700,000 in 1939. In the same period the annual value of manufactured products fell nearly $16 million. The number of manufacturing plants decreased from 4,179 in 1929 to 3,055 in 1939. Per capita income dropped in the same decade from $329 to $290.

THREE-WEEK 'HEN PARTY' was staged recently in Cincinnati Gas & Electric Co lobby. Any of these women caught opening a door of a refrigerator when a bell rang won poultry and eggs or a squab turkey. In addition, 25,000 who attended had a chance to win one of three major appliance awards given as door prizes

What was more alarming, young people were leaving to find opportunity in other states. In 1920 there were approximately 1,150,000 rural youth in the 10 to 29 age group. By 1940 there were 680,000 fewer.

Georgia Power feared that the many Georgians in the armed forces would not return to the state. This led to the development program in 1944 and the Better Home Towns contest in 1947.

The success of the program may well be judged from the 1950 contest. About 280 towns participated. These towns reported 245 clean-up, paint-up campaigns, 394 new recreational projects, 285 street and sidewalk improvement projects, 147 sewerage improvement programs, and 102 public park improvements. New schools and improvements to existing school buildings totaled 639, and 50 community houses were constructed. Church improvements, including new churches, were 436 in number.

Though many of these improvements could be considered minor, they all added up. As Georgia Power says of this contest, "Everybody wins." But the cash prizes now go to 21 towns. Contest communities are grouped by population in towns under 750, 750 to 3,000, and over 3,000. From each group there is a first prize of $1,000, second of $750, and third of $500. There are also four $100 prizes and six certificates of achievement.

Since first prize winners are barred from competing the next year, the company this year set up a $1,000 sweepstakes for previous first place winners. They will be judged on their accomplishments during the 1951 contest period. The money must be spent for civic improvements.

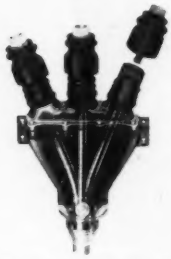
Georgia Power also sponsors three other annual contests which contributed to its winning the Coffin Award. These contests are the 4-H Club Hybrid Corn Production Contest, Winter Grazing Contest, and Year-Round Grazing Contest for Veteran Farm Trainees.

Most coveted of the electric industry's recognitions of merit, the award was established 29 years ago by the Coffin Foundation as a tribute to the memory of Charles A. Coffin, founder and first president of General Electric Co. Each year it honors "a distinguished contribution to the advancement of electric light and power service for the convenience of the public and the benefit of the industry."

The winning company receives $1,000 for the employees' benefit fund and a gold medal.

ISOLATE EQUIPMENT and PRIMARY FEEDERS with G&W DISCONNECTING POTHEADS

Disconnecting potheads provide convenient means for sectionalizing and isolating distribution circuits and equipment. These hermetically sealed cable terminations with porcelain enclosed plug and socket disconnects are used singly or with gang operating mechanisms to perform many sectionalizing tasks.

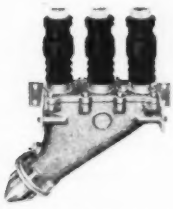


Plug and socket disconnect for convenient non-load-break isolation of equipment.

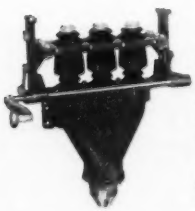
Where a second feeder is available at pole top or in vault or manhole, disconnecting potheads are used to transfer load to the second feeder and isolate the normal feeder for test, maintenance, or repair. Dummy caps protect the feeder not in use.

To isolate equipment or feeders, dummy centers are inserted between the plug and socket portions of the disconnect.

Flexible jumpers on disconnecting pothead caps permit connections to be shifted as required. This type of installation is often used for shifting load connections to balance three phase lines feeding single phase loads.

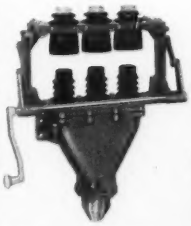


45° angle body specially designed for pole-top mounting.



Compact gang operating mechanism in closed position.

Gang operating mechanisms, especially suitable for vault and cubicle installation, provide visible air break at the cable termination. They save space and eliminate the necessity of other isolating devices.



Visible air break isolation in open position.

Single and multiple conductor disconnecting potheads rated 5,000, 7,500, and 15,000 volts non-load-break are listed in G & W Bulletin AB51. Write for your copy today.

Use G & W Cable Accessories for
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OIL FUSE CUTOUTS

Single or Gang Operated Fuse-Switch Units

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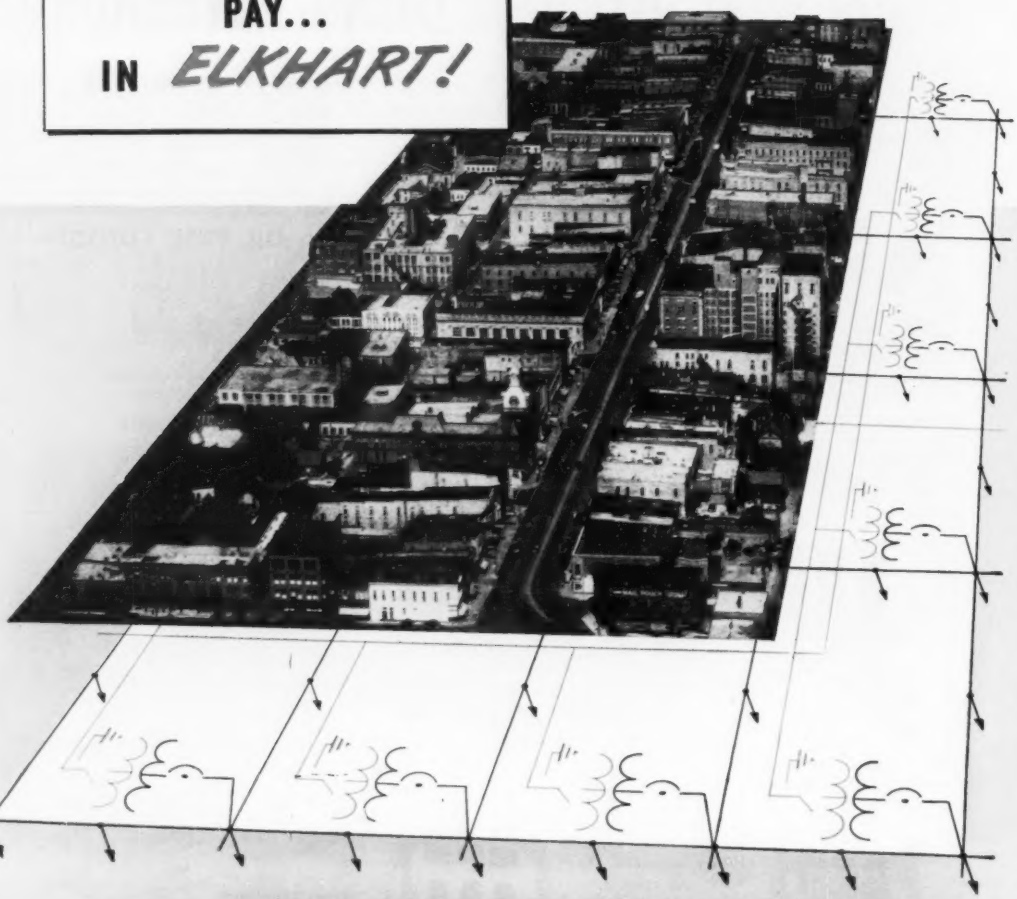
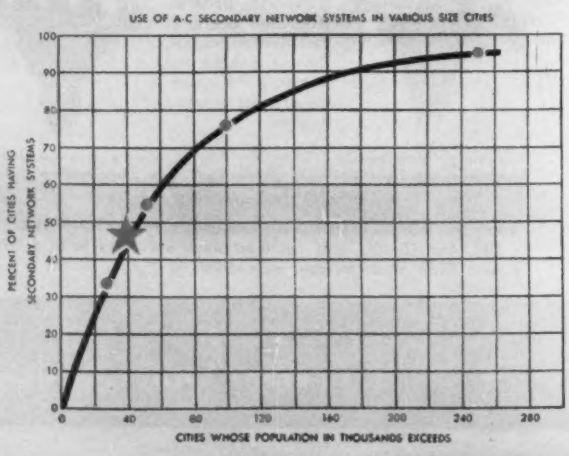
NETWORK SYSTEMS PAY... IN *ELKHART!*



FACTS ABOUT ELKHART'S A-C SECONDARY NETWORK SYSTEM.

The secondary network system is supplied from 13 vaults having a total capacity of 3,900 kva. The area covered by Elkhart's network is almost 20 square blocks, containing 3.61 miles of conduit, 5.47 miles of primaries and 2.27 miles of secondary feeders.

One third of all cities in the United States with a population of 25,000 or more have network systems, while one half of all cities with a population of 50,000 or more have network systems.



17 years' uninterrupted service... no voltage-regulation problems

There's no power service problem in the business district of this bustling Indiana town of 40,000 . . . they took care of that 17 years ago. Then, Elkhart was struggling with an overloaded radial system, consisting of 3-phase primaries and both 3-phase and single-phase secondaries . . . tranformers were mounted on practically every pole. The Fire Department and fire underwriters were concerned . . . the utility was plagued with voltage-regulation problems.

OVER AND UNDER . . . In 1934 the Indiana and Michigan Electric Company met the problems of Elkhart's business district by installing an *A-C Secondary Network System.* Transformers and primaries were placed underground . . . the secondaries and services overhead. This overhead and underground combination, particularly applicable to smaller cities and towns, made possible great economy in the original installation cost.

IMPROVED SERVICE . . . The A-C Secondary Network System has resulted in a high standard of continuity of service and uniformly good voltage-regulation, not attainable through radial distribution systems. Underground placement of the primaries and transformers has greatly reduced congestion and improved appearance.

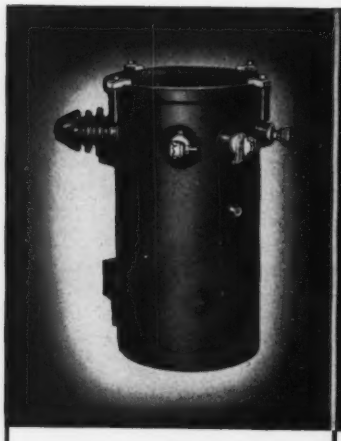
ABOUT MAINTENANCE . . . Maintenance story here is typical of all users of secondary networks . . . it's low, almost negligible. The utility reports that in 17 years of operation, there has never been a complete interruption of the system. Underground crews like the convenience of maintaining the system. They know . . . they work with the equipment.

CUSTOMERS AND UTILITIES BENEFIT . . . Utility customers appreciate the high-quality service and uniformly good voltage-regulation afforded by network service. The utility benefits from reduced operating and maintenance expense and improved customer good will. Large or small, your town can have high-quality network service . . . at a cost commensurate with the benefits this service affords. Westinghouse makes this equipment and can help in your planning. Call or write: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-97155

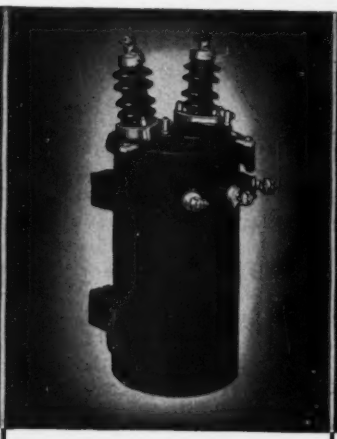
YOU CAN BE SURE.. IF IT'S
Westinghouse
NETWORK EQUIPMENT

MOLONEY DISTRIBUTION TRANSFORMERS
...for *DEPENDABILITY and PERFORMANCE*



CONVENTIONAL TYPE LL

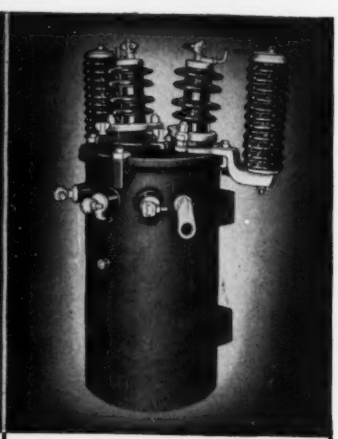
The Type LL Transformer is provided with sidewall-mounted high voltage and low voltage bushings for use on system voltages of 5000 volts or below. These transformers are manufactured in standard Kva ratings from 3 to 100 Kva. Porcelain protective caps are regularly supplied on the high voltage terminals of Type LL Transformers to protect the lineman from accidental contact with the live terminals.



CONVENTIONAL TYPE CL-2

The Type CL-2 Transformer is provided with two cover-mounted high voltage bushings. These transformers are standard in sizes 167 to 500 Kva in all voltages and in sizes 3 to 500 Kva in voltages above 5000 volts.

Transformers with a single cover-mounted high voltage bushing, designated as Type CL-1, are designed for use on grounded neutral systems. One end of the high voltage winding on this type transformer is grounded to the tank internally.



COMPLETELY SELF-PROTECTED

Completely Self-Protected Transformers are equipped with lightning arresters, internal protective links, tank grounding gaps, and secondary circuit breakers. These transformers are available in standard ratings up to 100 Kva and voltages up to 15000 volts. High voltage bushings are sidewall-mounted for voltages of 5000 volts and below and are cover-mounted for voltages above 5000 volts.

The Moloney Electric Company has a transformer to meet the requirements of any distribution system. Recognition of the fact that continuity of service is a "must" on these systems has always been a guide to Moloney engineers in the design of distribution transformers.

Conventional Distribution Transformers are available for those customers who prefer to supply their own protective equipment. For those who prefer integrally mounted protective equipment, there is available a complete line of CSP (Completely Self-Protected) Transformers. Superior electrical performance is assured in all Moloney transformers as a result of liberal design and quality control.

MED1-11

MOLONEY ELECTRIC COMPANY

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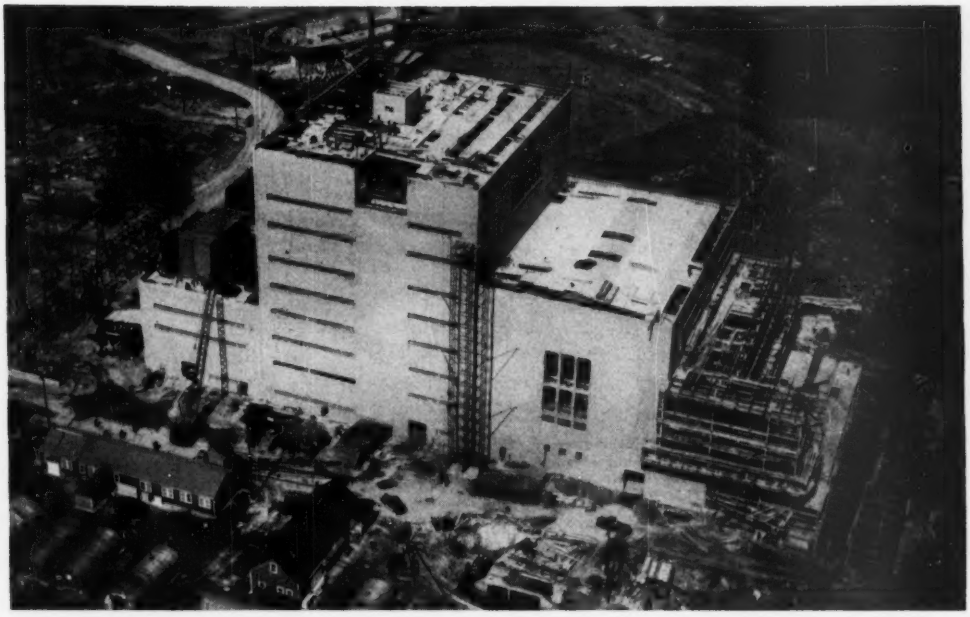
SALES OFFICES IN ALL PRINCIPAL CITIES • FACTORIES AT ST. LOUIS, MO. AND TORONTO, ONT., CANADA



SALEM HARBOR Plant of New England Electric System, on Boston's North Shore, is scheduled to begin operation this Fall with a 75,000-kw unit. A similar unit is slated to go on the line in 1952. The project will cost $30 million

Supreme Court's Color TV Decision Favors CBS, Poses Some Questions

You can now have color television —CBS variety. The Supreme Court has so ruled, bringing to a climax the long-standing controversy between CBS and RCA. The decision left several questions unanswered:

(1) Will material shortages make the decision academic?

(2) Will RCA now make its color tube available to CBS and thus break the industry reluctance to go along with CBS's manually-received system?

(3) How will the public react? Will it string along with its black-and-white sets until color programming gets into high gear, or will it demand color equipment now?

The Court, in an 8-to-0 decision written by Justice Hugo Black, upheld a special three-judge Federal Court decision in favor of CBS handed down last Dec. 22. The special court had taken the case on an appeal by RCA from a FCC decision in favor of CBS.

Justice Black, in admitting the desirability of a "compatible" system—one receivable on present sets—wrote: "In the light of previous experience, the commission thought that further delay in making color available was too high a price to pay for possible 'compatibility' in the future, despite RCA's claim that it was on the verge of discovering an acceptible 'compatible' system."

RCA's only possible legal out: Under Supreme Court rules, the losing litigant has 15 days in which to file for a re-hearing. This means that RCA can ask for re-hearing on the court's decision and can ask the court or an individual justice for a stay on court judgment, which might tie up CBS color for the entire summer.

The Radio-Television Manufacturers Association, spokesman for the industry, pointed out that set manufacturers have lined up with RCA in the controversy. They don't like the CBS system because they feel it will be obsoleted shortly. Meanwhile, CBS is meeting the resistance of the set manufacturers by lining up its own manufacturing outlets.

Following the decision CBS announced it will be on the air with color within 30 to 60 days. These colorcasts would be shown before and after CBS' black-and-white schedules.

But the Battle Goes On

Radio Corp of America announced last week it planned to turn over its three-color electronic tube to Columbia Broadcasting System for study. If the tube were incorporated in the CBS system, it would eliminate the spinning disk now needed to convert tube images into a color picture. CBS immediately charged the tube was not ready commercially, and that RCA "once again was trying to delay color by making promises for the future." CBS added it was going ahead with plans to put its disk system on the market.

CHAIRMAN of EEI Electrical Equipment Committee, J. H. Foote, left, Commonwealth Services Inc, chats with Lloyd F. Hunt, Southern California Edison Co; Charles L. Derrick, Hartford Electric Light Co; Arthur C. Gohlke, Cleveland Electric Illuminating Co; Bartow Van Ness, Safe Harbor Water Power Co; and A. M. deBellis, Consolidated Edison Co

Less Opportunity Today to Increase Output Efficiency, EEI Group Hears

Although great strides have been made in technical aspects of power production and distribution in the past 15 years, opportunities for further improvement of efficiency are decreasing. This fact coupled with today's increasing cost of labor and materials poses a real challenge to the power supply engineer, members of the Edison Electric Institute Electric Equipment Committee were told at Los Angeles May 28-29.

To meet the challenge, Harold Foote, Commonwealth Services, Inc, urged utility system designers to: Plan well ahead to meet new customer demands, take an overall view of the economics of supplying customers, and design system components for uniform life expectancy.

Generator insulation testing practices surveyed by H. J. Klumb, Rochester Gas & Electric Corp, showed insulation resistance measurement remains the most-used method, with ac and dc dielectric withstand tests, dielectric absorption, and Doble tests used to a lesser degree.

Lester Hill reported that Pacific Gas & Electric Co has tested 1.7 million kva of generator capacity by the dc method in the past three years using rectifier test sets capable of producing dc voltage up to 40,000. Merit of the method, according to Hill, is ability to detect impending coil breakdown from the shape of the dc leakage current curve and to stop the test before coil damage results.

K. M. Stevens reported experience of Southern California Edison with ac withstand tests. Ac voltages are applied to generator coil windings in repetitive cycles in voltage steps of 150% rating, 175% and 200% plus 1,000 v. To date no machine winding failures have occurred during repetitive stressing at a given voltage. Failures have occurred when the shift was made to the next higher voltage. He found very little difference in coil breakdown voltage regardless of how long the test voltage was applied.

W. F. Wetmore, Detroit Edison Co, reported the committee recommendation that ASA Rotating Electric Machine Standard C-50 covering short circuit capabilities of synchronous machines remain unchanged. There was insufficient evidence thus far, he said, to support a reduction in permissible duration of fault current below the ten seconds now specified.

R. M. Pennypacker, Philadelphia Electric Co, reported little change in the inhibited insulating oil situation. Manufacturers of DBPC inhibitor are building up sufficient inventories to carry the needs of electrical manufacturers. Three manufacturers are investigating the use of inhibited oils in circuit breakers and will report soon.

Preliminary results of accelerated life tests on inhibited oil in progress by Pacific Gas & Electric have been satisfactory on a qualitative basis, but life of inhibited oils under test has not been so long as anticipated, according to H. T. Sutcliffe. He suggested the difference might be because of use of 120 deg C oil temperature for the tests.

L. Baskette reported Southern California Edison has 384,000 gal of inhibited oil in use in 955 equipments such as regulators, circuit breakers, transformers, and bushings. He reported a cost of 6¢ per gal for reclaiming old oil, 2¢ additional for inhibiting it with DBPC.

Present NEMA transformer noise standards are unrealistic and must be modified, A. M. de Bellis, Consolidated Edison Co, told the committee. Transformers built to these standards are causing customer complaints, he said, and are therefore not acceptable. He urged manufacturers to bring top transformer noise levels down to a realistic value. Utilities are entitled to continuing improvements at no extra cost when they buy a modern unit.

Clive Baugh reported Pacific Gas & Electric had found a 12-db difference in transformers built by one manufacturer to the same specifications during the same year.

European Power Supply Improved, Use Is Increasing, UN Group Finds

European electric power situation has improved appreciably in the period between March 1, 1950, and March 19, 1951, according to the Committee on Electric Power of the United Nations Economic and Social Council.

War-damaged installations have been restored in most countries. In spite of difficulties, mainly in delivery of certain grades of coal, thermal plants have received normal supplies of fuel and have been maintained properly.

Use of Power Up 13%

Consumption has shown an upward trend, especially since the middle of 1950. Percentage increase in 1950 over 1949 was 13%, compared to not quite 8% for 1949 over 1948. This larger increase came partly from elimination of restrictions because of adequate hydro conditions, but mainly it was due to the large number of new hydro and thermal plants put into operation.

Production capacity for manufacturing electrical equipment at the present time is sufficient to meet the needs of the various European countries. However, shortages of certain raw materials, mainly transformer sheets, and financial difficulties in certain countries still inhibit a satisfactory rate of production, the UN report said.

Power Interchanges Studied

To rationalize and economize Europe's energy sources, the committee has studied the various means of supplying Bavaria with electric power. And in a general way, the committee has studied the electric power exchanges economically feasible between the Western occupation zones of Germany, Austria, Poland, and Czechoslovakia. The committee has asked the Secretariat to study the possibility of developing exports of power from Yugoslavia to adjacent countries.

Electric power exchanges between various countries are still hampered by administrative difficulties which call for simplification. To help remove these obstacles and to encourage optimum use of all European power resources, the committee has made several studies.

A group of experts, set up to study legal questions, observed that national laws concerning supply and exchange of electric power were mainly long-standing, complex, and incompatible with the present grid system. It has proposed various ways in which these laws might be simplified, especially where guaranteed exchanges and sporadic supplies are most concerned.

The group is examining the problem of hydro development on rivers of common interest. Where rivers constitute the frontier between two or more countries, the group has under study the simplification of present administrative formalities with a view to facilitate international development schemes. Where rivers successively cross the territory of several countries, it was decided that establishment of general conventions would raise difficulties. The committee has requested the Secretariat to put its services at the disposal of governments to collect necessary data and to aid in the negotiation of bilateral and multilateral agreements.

E. W. Oesterreich Cited for His Pole Top Method

(See Front Cover)

Special recognition for his part in saving the lives of more than 100 linemen through development of the pole-top method of resuscitation was given to Edmund W. Oesterreich, general superintendent of distribution, Duquesne Light Co, at the 19th annual convention of the Edison Electric Institute in Denver, June 4-8.

Oesterreich was honored by the electric industry and national safety organizations with a Citation for Distinguished Service from EEI and a commemorative bronze.

Taking part in the ceremonies were George Fritz, Duquesne Light, second man to be revived by the Oesterreich method. Fritz suffered electric shock 18 years ago and was saved by Michael Butchko, now a substation operator for Duquesne Light. Butchko become the first of some 95 men using the pole top method to receive the EEI Medal for Resuscitation.

Presentation of the citation to Oesterreich was made by C. E. Kohlhepp, president of Wisconsin Public Service Corp. Formal recognition for what his citation terms a "signal contribution to humanity and to the electric industry" thus came 20 years after Oesterreich evolved the resuscitation method.

GANG OF LOAD BUILDERS snatched up price-cut appliances in Macy's basement last week during price war that developed in New York as result of Supreme Court's Fair Trade Law ruling. Salesman marks down an item for third time in one day

HOUSE PUBLIC WORKS Committee members and others who toured proposed St. Lawrence Project area last week look over Canadian model at Niagara Falls, Ont. L to R, Gen L. A. Pick, chief, U. S. Army Engineers; R. H. Saunders, Ontario Hydro-Electric Commission; Rep Charles A. Buckley (D-N.Y.); R. B. McWhorter, FPC (back); Rep John A. Blatnik (D-Minn.); and Rep George A. Dondero (R-Mich.)

Supreme Court Refuses W. Texas Utilities Case

Attorneys at the National Labor Relations Board are puzzled by the Supreme Court's peremptory refusal to review the board's decision in the West Texas Utilities Co case.

They understand the effect to be that the decision stands, although it is in direct conflict with the court's decision two weeks ago, in the Highland Park case, that AFL and CIO officials must sign non-communist affidavits in order for their affiliated unions to use the Taft-Hartley Law.

In West Texas Utilities case, the Abilene (Tex.) company had refused to bargain with three locals of the AFL Electrical Workers because the AFL officers had not signed affidavits, although officers of the Electrical Workers' union had complied. NLRB held that AFL compliance was not necessary and was upheld by the U. S. Circuit Court of Appeals for the District of Columbia.

This court went even further than NLRB. It held that an employer is obligated to bargain with a majority union even if it is not in compliance, although the labor law prevents NLRB from acting in behalf of such a union.

Other issues in the case were: (1) The company's right to rely on an interpretation of NLRB's general counsel, then Robert N. Denham, that the company did not have to bargain with the union until AFL officers signed affidavits and (2) whether NLRB has sole discretion in deciding whether a union is in compliance.

It was expected that the least the Supreme Court would do was send the West Texas Utilities case back to the court of appeals for redetermination in the light of the Highland Park decision.

Actually, compliance is pretty much a dead issue right now. The AFL officers have signed affidavits, and in fact had signed them by the time NLRB issued its order. This was another factor in the case.

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New 'Fact Finder' Out

A new, expanded edition of the "Fact Finder," published by the electric utilities Public Information Program has just been printed. The reference work, of 150 pages, may be obtained from Bozell & Jacobs, 31 West 47th St., New York 19, N. Y. Cost is $3 a copy.

Missions to Map Central American Power Sites

Two Bureau of Reclamation missions have been sent to Central America to study electric power possibilities in Nicaragua and Honduras under the President's Point Four program, according to Secretary of the Interior Chapman.

A six-man mission to Managua, Nicaragua, will assist the Ministry of Development and Public Works with a preliminary investigation of water development in western Nicaragua as the basis for agricultural and industrial expansion, and will study the feasibility of using volcanic hot springs for generating geothermal power. Chief of the Mission, Robert J. Newell, will serve as project planning engineer. He will be assisted by Charles S. Sherman, hydrologist; Elbert N. Harshman, economist; Boyd S. Brown, administrative engineer; and Hollis O. Britt and John R. Hammond, electrical engineers.

George A. Fleming, bureau power utilization engineer, has been given a 30-day assignment in Tegucigalpa, Honduras, to assist the Honduran government with plans for a feasibility survey of hydroelectric power development possibilities as part of the program.

•

Niagara Redevelopment Would Require 5 Years

First power from the proposed redevelopment of Niagara Falls will not go on the line for five years after work has started, a spokesman for the Army Corps of Engineers has told Congress.

Col W. E. Potter, assistant chief of engineers for special projects, testified that construction of the proposed power development would require four years, beginning a year after design work was begun. The Corps is asking $450,000 in a supplemental appropriation to carry on preliminary work.

Legislation to authorize federal construction of the redevelopment project has been introduced by Sen Herbert H. Lehman and Rep Franklin D. Roosevelt, Jr, both New York Democrats. It has been estimated that capacity at the Falls would be jumped from the present 440,000 kw to 1,572,000 kw.

You said it...

...We did it!

We designed ELEMEX capacitors to give you what you need!

Utility men with ten to fifteen years of field experience knew pretty well what they needed and wanted in capacitors. Just about ten years ago L-M began its capacitor design and in 1944 began producing capacitors incorporating some of these user-ideas.

ELEMEX capacitors have an excellent service record. Rate of failure has been low; performance has been consistently good—so good, in fact, that we have never completely caught up with the demand for more and more ELEMEX capacitors.

Here are some of the things you said you wanted in a capacitor, and what L-M has done about it.

1. **Long life:** L-M's low unit insulation stress, individual evacuation, capillary impregnation and many in-process tests have assured a very long life and freedom from trouble. We're proud of our performance record! Over 99.44% of all ELEMEX capacitors manufactured over a 7-year period are still in operation. That is a failure rate of less than 1/10% per year!

2. **Strong solder-sealed bushings:** L-M developed a new, stronger method of solder-sealing. L-M tests 100% of its bushings and seals. Actually, it takes 1900 pounds to force an L-M bushing out of the cover! Also we've got higher creepage distance, unbreakable terminal caps.

3. **Pure aluminum electrodes:** Not just tinned copper—but pure aluminum.

4. **Simple, easy installation:** We designed them with uniform terminal height above mounting flanges, gave you "Paragroove" connectors which simplify wiring.

5. **Low-cost maintenance:** L-M introduced stainless steel tanks and will *continue* to produce them as long as Type 304 is available. (Incidentally, this forced down the price of mild steel units, which saved you money on *both* types!) L-M mild steel tanks have *three* coats of enamel, each *baked* separately, not just one or two spray coats.

6. **Streamlined tanks:** Large-radius rounded corners make ELEMEX tanks smooth, give improved appearance, and extend paint life. Sharply sheared edges always corrode first.

7. **Convenient, sensible packaging:** In sturdy, wood reinforced sealed cartons. Full identification printed on sides and ends of carton, with the serial number repeated on the top of the carton for the convenience of the storekeeper. Painted surfaces subject to abrasion in shipment are protected with wax paper. Only L-M packs its 2 and 4 unit hangers in individual cartons to simplify handling for you.

8. **Simple low-cost switching:** L-M's new Voltage-Sensitive Control gives you accurate, dependable switching at a cost low enough to permit its use even with small capacitor banks.

Want to cut line losses? Reduce wattless current on your lines? Get capacitors that stay on the job? Ask the L-M Field Engineer for full information on ELEMEX capacitors; or write Line Material Company, Milwaukee 1, Wis. (a McGraw Electric Company Division).

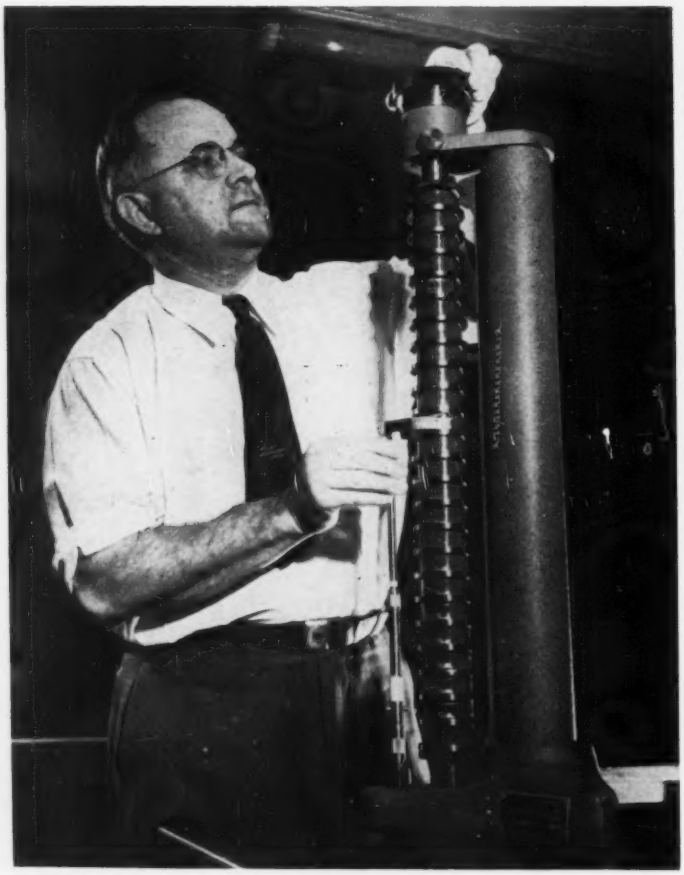
LINE MATERIAL... Capacitors

Complete Coordinated Equipment for Distribution Today

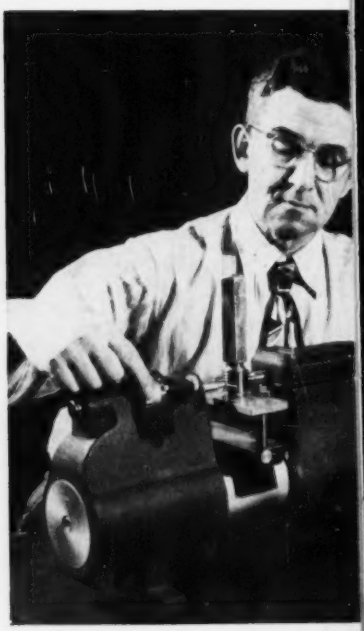
Westinghouse Lab Takes Micrometer's Measure

'Hair's Breadth' Is Only Rough Approximation to Men Who Run Gauge-Checking Laboratory of Company's Transformer Division, Sharon, Pa.

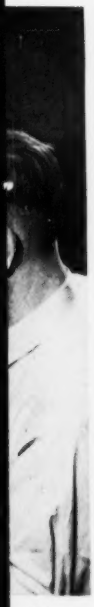
STANDARD LENGTH BARS are used by Rol in gauge laboratory of Westinghouse Transfor to check a micrometer used by craftsman Ken



MICROMETER, to the average workman, is the ultimate in accurate measurements. Lab, however, constantly checks accuracy of plant's micrometers. Here Ernest Zielke tests inside micrometer with Pla-Chek. Device detects errors of 1/10,000 of an inch



THREAD GAUGES used to check threads on formers are tested by supermicrometer. James ground wires placed in thread grooves to de

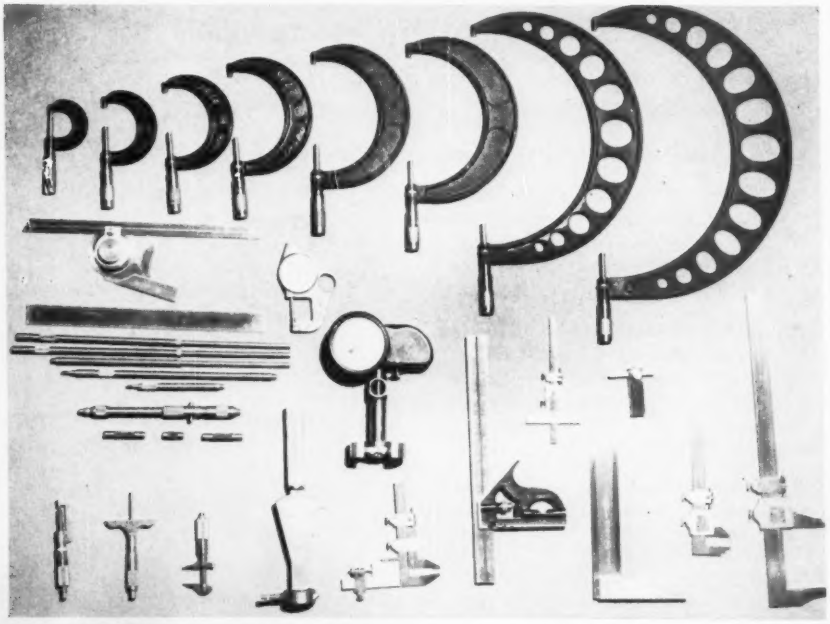


rt Johnson
er Division
th Miller

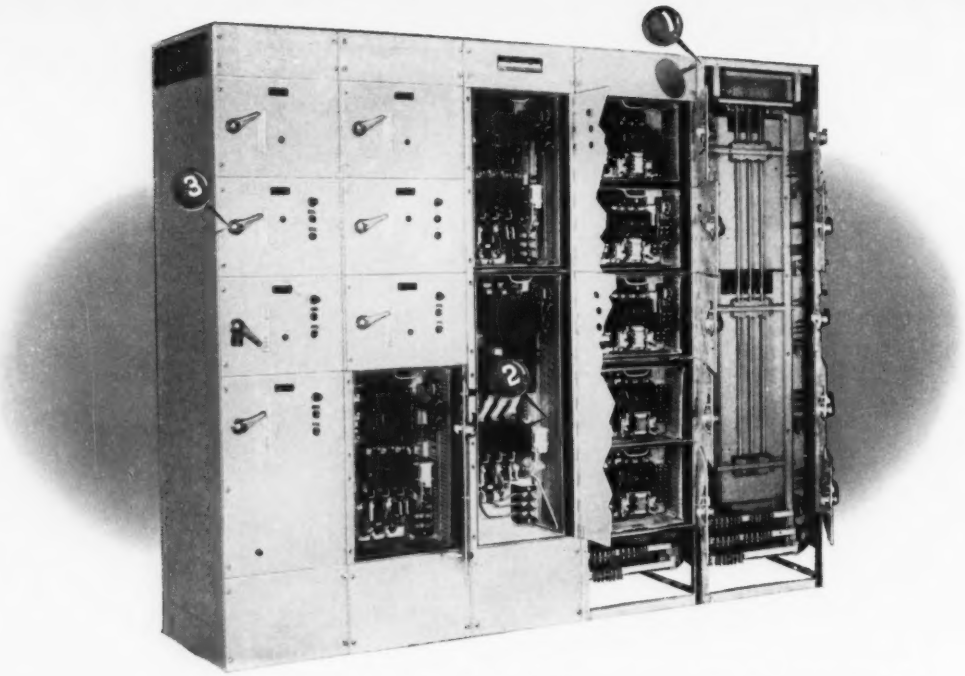
'HOKE' BLOCKS used for comparative measurement are ground to an accuracy of 3 millionths of an inch. Highly polished surfaces stick together if brought into contact

COMPARATOR checks patterns and gauges too small to be measured by ordinary means. One thousandth of an inch on ½-inch template appears 1/16 inch on screen

nuts and bolts of trans-
Snyder uses three finely-
ermine gauge's diameter



PRECISION ARRAY gives technicians exact measurements of any linear object under a foot. Micrometers and Vernier gauges are familiar instruments. In center is a dialed Comtor gauge and above it to the left is a dial snap gauge. Wedge-shaped device is a Swedish hold gauge. Can you name others in picture?



Everybody says "WELL BUILT"

And they really mean it when referring to Westinghouse Control Centers. Here you get top-quality construction which gives you all the advantages of centralized motor control . . . quality at every one of the following points:

1. **Sturdy, Self-Supporting, Tight Structures.** No need for angle iron or other bracing. No gaps or cracks to permit entrance of foreign objects. Interior is fully protected.

2. **Complete Baffling** localizes unusual arcing if faults occur. A short circuit in one starter unit cannot spread throughout the entire structure. Removable grill baffle on right side of each unit provides easy accessibility.

3. **Safety Doors,** with safety-interlocking handles, remain on the panel when the starter unit is removed. Doors can be fastened closed over open space to prevent entrance by unauthorized personnel.

For further evidence of a "well-built" control center, check these features: self-cooling construction for foolproof ventilation, plug-in starter units, vertical and horizontal wiring troughs.

You get all these features and more, when you specify Westinghouse Control Centers. The complete story is contained in Booklet B-4213. For your copy, write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-27009

DESIGN TESTED AND VERIFIED IN THE Westinghouse HIGH POWER LABORATORY

YOU CAN BE SURE.. IF IT'S Westinghouse

CONTROL CENTERS

Early Canadian Statistics Point to Records in 1951

Statistics for the first two months of 1951 indicate this will be another record-breaking year for the Canadian electric utility industry. Output should exceed last year's record 50,902,519,000 kwhr by at least 5 billion kwhr and should top 4 billion kwhr each month for the first time. Consumption of primary power should top last year's record 46,084,703,000 kwhr by at least 4 billion kwhr. Gross exports to the United States should exceed 2 billion kwhr for the first time since 1947.

The following statistics supplied by the Dominion Bureau of Statistics are in thousands of kilowatt hours:

Period	1951	1950
Two Month's Output	9,160,395	7,861,005
Primary	8,605,841	7,439,837
Secondary	554,554	421,168
Primary Consumption	8,350,594	7,217,407
Net Exports to U. S.	336,839	279,405
February Output	4,376,574	3,780,016
Primary	4,106,097	3,552,984
Secondary	270,477	227,032
Primary Consumption	3,983,115	3,434,183
Net Exports to U. S.	164,643	151,459
January Output	4,783,142	4,080,989
Primary	4,499,065	3,886,853
Secondary	284,077	194,136
Primary Consumption	4,366,801	3,783,224
Net Exports to U. S.	172,196	127,946

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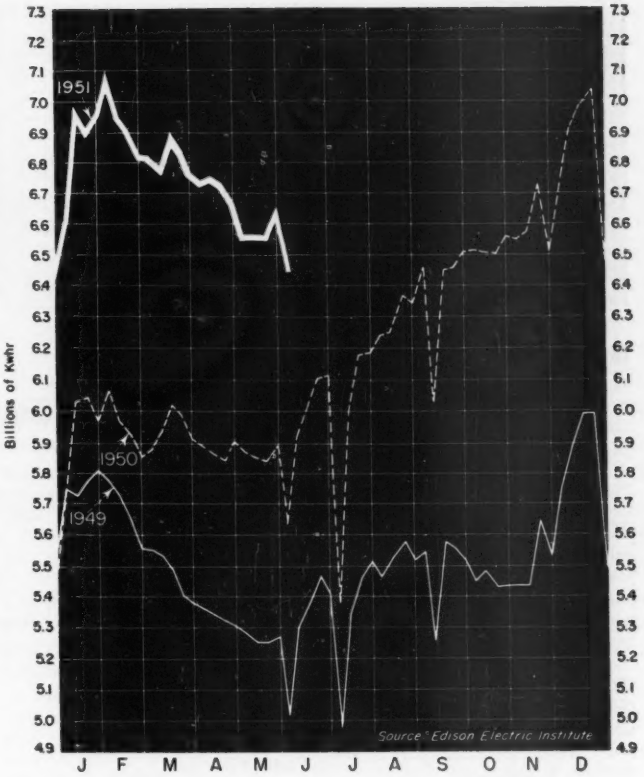
Rush to Finish Ross Plant

At the suggestion of the Defense Electrical Power Administration, Seattle City light will attempt to put its new Ross powerhouse into production during the winter of 1952-53 instead of in June, 1953. John M. Nelson, assistant City Light superintendent, told City Council's Utilities Committee that Depa had promised to give assistance in getting priorities on scarce materials if the city would advance its schedules.



Output Week Ended June 2—6,444,741,000 Kwhr

Weekly Output, Millions Kwhr

1951	1950	1949
June 2 6,445	June 3 5,632	June 4 5,018
May 26 6,653	May 27 5,894	May 28 5,270
May 19 6,559	May 20 5,845	May 21 5,255
May 12 6,567	May 13 5,864	May 14 5,527
May 5 6,560	May 6 5,868	May 7 5,284
Apr 28 6,674	Apr 29 5,902	Apr 30 5,304
Apr 21 6,730	Apr 22 5,846	Apr 23 5,326
Apr 14 6,747	Apr 15 5,863	Apr 16 5,343
Apr 7 6,736	Apr 8 5,898	Apr 9 5,360
Mar 31 6,767	Apr 1 5,912	Apr 2 5,378

Percent Change from Previous Year

	June 2	May 26	May 19
New England	+10.3	+14.3	+10.6
Mid-Atlantic	+13.5	+13.1	+11.1
Central Industrial	+14.4	+12.9	+13.5
West Central	+12.5	+11.2	+12.3
Southeast	+14.2	+12.3	+12.9
South Central	+22.8	+17.7	+16.6
Rocky Mountain	+13.7	+11.1	+ 9.9
Pacific Coast	+14.0	+11.6	+10.0
Total United States	+14.4	+12.9	+12.2

MEETINGS

American Society of Mechanical Engineers
Semi-Annual Meeting, Royal York Hotel, Toronto, Canada, June 11-14; Fall Meeting, Hotel Radisson, Minneapolis, Minn., September 25-28.

Northwest Electric Light & Power Association
Accounting Section, Boise Hotel, Boise, Idaho, June 14-15.

Canadian Electrical Association
Annual Convention, Algonquin Hotel, St. Andrews, New Brunswick, June 18-21.

American Society for Testing Materials
Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 18-22.

Michigan Electric Light Association
Annual Convention, Mackinac Island, Mich., June 24-27.

★**American Institute of Electrical Engineers**
Summer General Meeting, Royal York Hotel, Toronto, Canada, June 25-29; Pacific General Meeting, Multnomah Hotel, Portland, Ore., August 20-23; Fall General Meeting, Hotel Cleveland, Cleveland, Ohio, October 22-26.

Pacific Electronic Exhibit
Civic Auditorium, San Francisco, August 22-24.

Illuminating Engineering Society
National Technical Conference, Hotel Shoreham, Washington, D. C., August 27-30.

Northern California Electrical Bureau
Annual Exposition, Civic Auditorium, San Francisco, September 1-9.

Rocky Mountain Electrical League
Fall Convention, La Fonda Hotel, Santa Fe, N. M., September 9-12.

★**Public Information Program**
Annual Workshop Conference, Edgewater Beach Hotel, Chicago, September 20-21.

★**Iowa Utilities Association**
Management Conference, Fort Des Moines Hotel, Des Moines, Iowa, October 1-2.

★**International Association of Electrical Inspectors**
Eastern Section, Chalfonte-Haddon Hall, Atlantic City, N. J., October 1-3.

★**National Farm Electrification Conference**
Annual Meeting, Hotel Gibson, Cincinnati, October 9-10.

★**Indiana Electric Association**
Annual Convention, French Lick Springs Hotel, French Lick, Ind., October 10-12.

★**International Association of Electrical Leagues**
Annual Conference, Roosevelt Hotel, New Orleans, October 10-13.

★**National Association of Railroad and Utilities Commissioners**
Francis Marion Hotel, Charleston, S. C., October 16-19.

★**National Electronics Conference**
Annual Conference, Edgewater Beach Hotel, Chicago, October 22-24.

★**American Standards Association**
Annual Meeting, Waldorf-Astoria, New York, October 22-24.

★Addition this week.

NEWS ABOUT PEOPLE

Northern States Power Elects King, Watson VPs

Two new vice presidents have been named by Northern States Power Co. They are Allen S. King, formerly Fargo division manager, executive vice president; and H. H. Watson,

A. S. KING

H. H. WATSON

who has been manager of electric operations, vice president in charge of operations.

King started work for Northern States Power in 1922 as an engineer. Since then he served as division manager at Minot and Grand Forks before heading the Fargo division in 1945.

Succeeding King as manager at Fargo is Harry L. Silk. He has been division auditor at Fargo since 1936. He joined the utility in 1924 working in the general office in Minneapolis.

Watson succeeds H. C. Cummins, first vice president of Northern States Power, as vice president in charge of operations. Cummins will assume new responsibilities for long-range engineering studies and planning. He has been vice president of Northern States Power since 1939.

Beginning his career with H. M. Byllesby & Co in 1911 as an engineer, Watson subsequently served Northern States Power at Sioux Falls, Mankato, and Ottumwa, Iowa. After serving San Diego Consolidated Gas & Electric Co for ten years, he returned to NSP in 1932 as general superintendent of construction. Eight years later he became manager of electric operations.

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Dr C. A. Thomas Heads Monsanto Chemical Co

Dr Charles Allen Thomas has been elected president of Monsanto Chemical Co. Executive vice president since 1947, he succeeds William M. Rand who is retiring.

A leading atomic scientist, Thomas began his industrial career with General Motors Corp and established research laboratories in Dayton, Ohio. When the laboratories were acquired by Monsanto in 1936 Thomas became the company's research director.

Rand joined the Merrimac Chemical Co in 1921 and later became its president. When the company was merged with Monsanto, Rand became general manager of the Merrimac Division and a Monsanto vice president. He was elected president of the firm in 1945.

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E. R. Smith, manager of the Lorain division of Ohio Edison Co for the last three years, has been named manager of the company's operations in Warren, Ohio. **E. J. Burger,** Warren division manager, replaces Smith as manager of the Lorain division. Taking charge of utility's operation in Elyria is **Fred W. Loihnes.** He has been superintendent of accounts for the Elyria division.

Central Vermont Elects Eaton Vice President

Central Vermont Public Service Corp has elected Chester B. Eaton a vice president. He has been general commercial manager of the utility since last January.

In other appointments the company

C. B. EATON

named Harold J. Lyne comptroller and Robert E. Van Buskirk clerk.

Eaton joined Central Vermont in 1946 as director of sales promotion following four years' service in the Army. He is president of the Vermont Electrical Association.

Lyne has been auditor for Central Vermont. Van Buskirk, with the utility since 1930, has served in the accounting, treasury, and rate departments.

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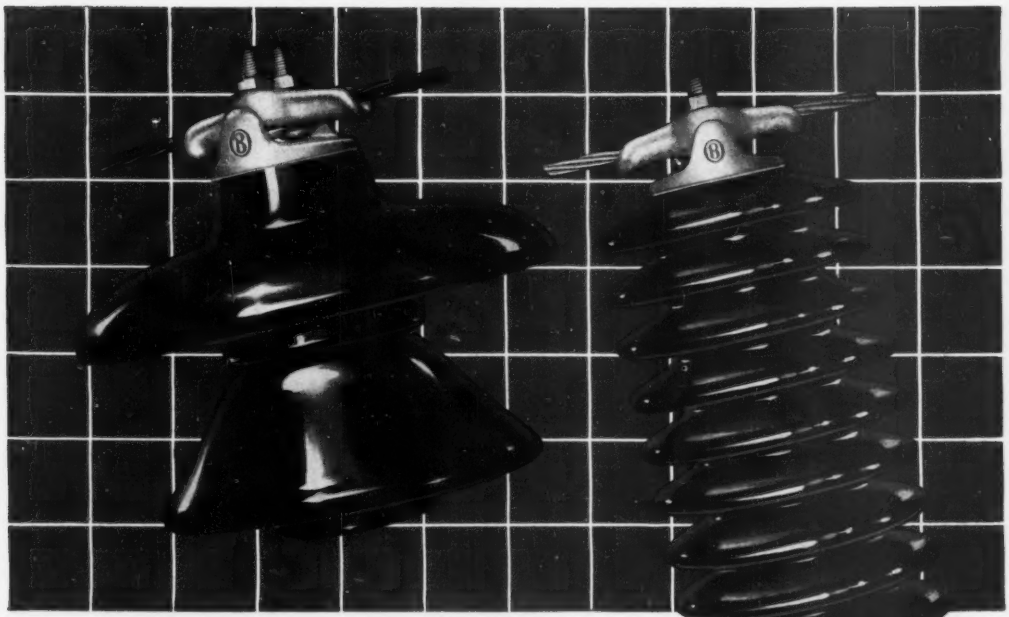
Henry L. Lofft has been appointed project manager of the steam power plant to be constructed by the Tennessee Valley Authority near Kingston, Tenn. He has been project manager of the Willows Creek steam plant since last year.

William R. Poole, has been named manager of Toledo Edison Co's newly established industrial development department. The new department will provide information and statistical service for industries in the area served by the company. Poole has

(*Continued on page* 27)



Clamptops let you USE good radio-proof design

Shape of the porcelain and physical qualities of a pintype insulator have little influence on radio interference unless tie wires permit the difference to show. Poor electrical contact of the tie on either the conductor or insulator head can largely cancel radio-proof design.

You can fully utilize this design, however, when the insulator is equipped with the O-B Clamptop. A bolted connection provides permanently tight head contact and develops the inherent radio silence built into the insulator.

Two simple nuts on a clamping piece replace the time-consuming and troublesome hand serve, and produce strength of anchorage that cannot be duplicated by older serving methods. This remains at permanent full efficiency in spite of forces that would loosen the ordinary tie wire attachment.

If you want to use the good radio characteristics of modern pintype insulator, specify these units with O-B Clamptop heads.

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4113-M

PAPER INSULATED CABLE

For outstanding, uninterrupted, dependable service . . . ROEBLING!

EXPERIENCE SHOWS you'll get maximum economy by putting circuits underground with Roebling Paper Insulated Lead Encased Cables. This immediately does away with the expensive maintenance of overhead lines. And Roebling cables . . . entirely produced in Roebling plants to the most exacting specifications... are your assurance of unsurpassed performance and low-cost service.

Roebling Shielded Type H is a foremost selection for 3-phase grounded neutral circuits from 13 to 33 kv. It is made in single and multiple conductor construction, in regular and Compack strand (round or sector). Where the cable will be exposed to electrolysis or corrosion, the conventional lead sheathing can be given an outer non-metallic protective jacket of ROESHEATH.

Large quantities of Roebling's complete electrical wire and cable line are required in the national rearmament program. The Roebling organization and distributors will, however, do everything possible to meet your delivery requirements. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

Atlanta, 934 Avon Ave ★ ***Boston,*** 51 Sleeper St ★ ***Chicago,*** 5525 W. Roosevelt Rd ★ ***Cincinnati,*** 3253 Fredonia Ave ★ ***Cleveland,*** 701 St. Clair Ave, N.E. ★ ***Denver,*** 4801 Jackson St ★ ***Detroit,*** 915 Fisher Building ★ ***Houston,*** 6216 Navigation Blvd ★ ***Los Angeles,*** 216 S. Alameda St ★ ***New York,*** 19 Rector St ★ ***Odessa, Texas,*** 1920 E. 2nd St ★ ***Philadelphia,*** 230 Vine St ★ ***San Francisco,*** 1740 17th St ★ ***Seattle,*** 900 1st Ave, S. ★ ***Tulsa,*** 321 N. Cheyenne St ★ Export Sales Office, ***Trenton, N. J.***

Build PROFITS with SYLVANIA KITCHEN LITES

Don't miss this brilliant sales item . . . a 150-watt bulb in regular 100-watt size. Fits all standard (medium base) fixtures. Etched "Kitchen Lite" for easy identification.

This new Sylvania light bulb gives kitchens, playrooms, work-rooms, and garages *extra* light . . . gives dealers *extra* sales . . . utilities *extra* load.

So, make certain all your customers know about this brighter bulb . . . a sure winner of goodwill everywhere.

Backed by powerful promotion

To help assure fast sales of the new Kitchen Lite, dealers and utilities get FREE, colorful counter cards . . . store and window streamers . . . newspaper ad mats, too. The coupon brings you full information. Mail it today.

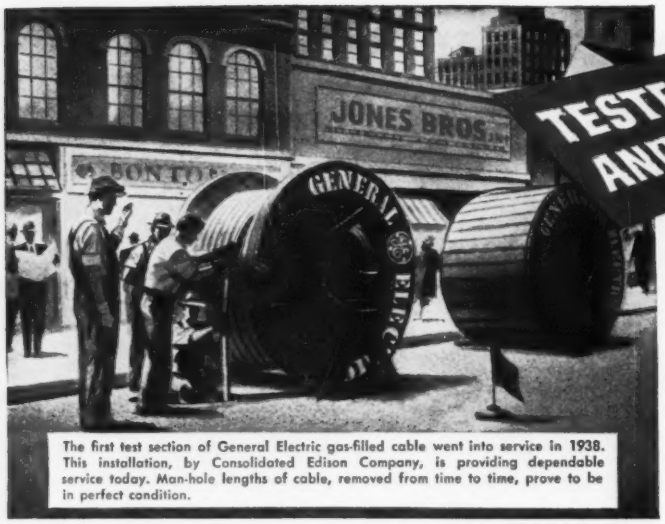
SYLVANIA ELECTRIC

Sylvania Electric Products Inc.
Dept. L-7206, 1740 Broadway
New York 19, N. Y.
Please send me full information about the Sylvania Kitchen Lite sales promotion.

*Name*_____
*Street*_____
*City*_____
*State*_____

LIGHT BULBS; FLUORESCENT TUBES, FIXTURES, SIGN TUBING, WIRING DEVICES; RADIO TUBES; TELEVISION PICTURE TUBES; ELECTRONIC PRODUCTS; ELECTRONIC TEST EQUIPMENT; PHOTOLAMPS; TELEVISION SETS

GAS-FILLED CABLE



The first test section of General Electric gas-filled cable went into service in 1938. This installation, by Consolidated Edison Company, is providing dependable service today. Man-hole lengths of cable, removed from time to time, prove to be in perfect condition.

. . . by more than 1,000,000 feet now in successful operation!

Low-pressure gas-filled cable—From 10 to 15 lb per sq in.—three conductors, three gas channels, with lead sheath. For 10 to 46 kv operation.

Medium-pressure gas-filled cable—Approximately 45 lb per sq in.—three conductors, three gas channels, and reinforced lead sheath. For voltages above 46 kv.

High-pressure gas-filled cable—Pressures to 200 lbs per sq in.—single conductor, with reinforced, double lead sheath and center gas channel. For operation at 69 kv and above.

Right! Today, over a million feet of General Electric gas-filled cable are in service, with never a failure due to inherent causes.

From the first 5000-foot test section installed in 1938 to a recently-completed installation of more than 40,000 feet, G-E gas-filled cable has operated to the complete satisfaction of its users.

Experience proves conclusively that the stable insulating and impregnating compound used in General Electric gas-filled cable is not affected by the presence of nitrogen gas, limited amounts of oxygen, or even mild ionization. Tests on laboratory samples and on cables in actual service show no measurable deterioration. Even after years of normal use, lengths of cable removed from service proved to be in perfect physical and operating condition.

If you would like to have the advantages of self-supervision and dependability for your high-voltage transmission and distribution circuits, choose General Electric gas-filled cable.

For complete information on the many features of gas-filled cable, as well as operating and performance data, get your free copy of the booklet, *G-E Gas-filled Cable*. Write to Section W19-627, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

News About People

(*Continued from page* 22)

served in the commercial, industrial, and appliance sales departments for Toledo Edison for six years. Earlier he worked as an industrial lighting engineer for General Electric Co.

B. J. Yeager, technical supervisor of power stations, has been named superintendent of Cincinnati Gas & Electric Co's Clermont Power Station near New Richmond, Ohio. **F. P. Corrigan,** chief engineer at the Miami Fort station since 1946, has been appointed assistant superintendent at Clermont. **P. T. Heady,** associate engineer at Miami Fort, succeeds Corrigan as chief engineer there. Yeager joined Cincinnati G&E in 1930 as an engineering co-op student. Four years later he became test engineer at the West End Power Station and in 1940 plant manager. He was promoted to mechanical engineer in 1946. Corrigan has been with the company since 1914 and Heady since 1926.

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C. L. Nau Resigns Post as Manager of APPA

Carlton L. Nau, general manager of the American Public Power Association and editor of Public Power Magazine, has resigned to enter business in the Northwest. APPA's assistant general manager, Alex Radin, will succeed Nau.

Nau will join the firm of R. W. Beck & Associates, public utility analysts and engineers, Seattle. Radin, associate editor of Public Power, is a former Chattanooga newspaperman. His successor will be Ron Ross, Washington correspondent for "Electrical World."

•

W. A. Weiss, manager of the Emporium, Pa., radio receiving tube plant of Sylvania Electric Products, Inc, has been appointed manager of the company's new receiving tube plant in Burlington, Iowa. He joined Sylvania in 1940 as a student engineer in Emporium and two years later became supervisor of quality control. In 1947 he was made manager of the Emporium plant and quality control manager for the entire Sylvania Radio Tube Division.

Lother Made Treasurer of Narragansett Electric

Elmer H. Lother has been elected treasurer of the Narragansett Electric Co, Providence, R. I. He is treasurer of Providence Steam Co and Mystic (Conn.) Power Co, and assistant treasurer of Attleboro (Mass.) Steam & Electric Co. All the companies are subsidiaries of New England Electric System.

Lother joined Narragansett Electric

E. H. LOTHER

in 1920 and held various accounting posts. He became auditor in 1928. Two years later he transferred to the Boston headquarters of the system serving as assistant general auditor.

After working as treasury representative and auditor for several utilities of NEES from 1933 to 1941, Lother was named auditor and later assistant treasurer of New England Power Service Co. Since 1944 he has been assistant treasurer of all system companies in the Mystic Valley, North Shore, and Northeastern districts, with headquarters at Malden.

•

Fred A. Banks, retired project engineer at the Grand Coulee Dam, Wash., has been appointed chairman of the water management subcommittee of the Columbia Basin Interagency Committee with headquarters at Portland, Ore. Banks since his retirement has served as consultant to the Bureau of Reclamation. The committee, headed by Bonneville Power Administrator **Paul J. Raver,** coordinates the water dispatching and stream-flow forecasts of various agencies concerned with flood control, power, irrigation, and navigation operations.

J. O. Woods has been elected president of the Southwestern Electric Cooperative, Inc, Clayton, N. M. Other new officers are **F. R. Mapes,** vice president, and **W. M. Stubblefield,** secretary-treasurer.

Kerr Atkinson, project engineer with Jackson & Moreland, Boston, since 1925, has established offices in Boston as a consulting engineer.

OBITUARY

Henry B. Dunn, 87, retired power salesman for Puget Sound Power & Light Co, died May 28 at Seattle. With Puget Sound P&L for 40 years, Dunn retired six years ago. He was a guest of Thomas A. Edison during the first demonstration of the electric lamp in New Jersey.

Oscar G. Thompson, 53, manager of the San Diego branch of General Electric Supply Corp, died May 11 at San Diego.

Porter C. Savage, 72, former assistant vice president of Consolidated Edison Co of New York, died May 24 at Clifton Springs, N. Y. He joined New York Edison Co in 1913 and retired from Con Ed in 1945.

Albert E. Wood, 62, assistant to the general manager of the industrial products division of Johns-Manville Corp, died May 29 at Spring Valley, N. Y.

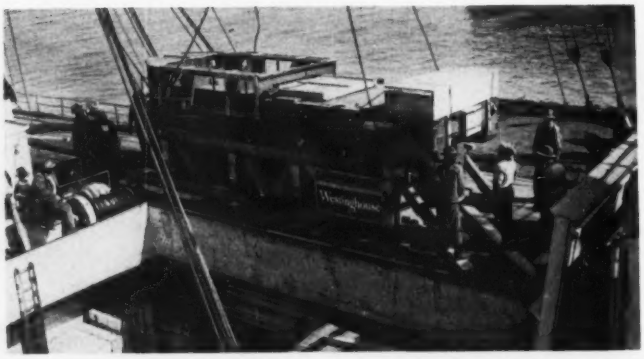
Walter A. William, 49, Winona manager for Mississippi Power & Light Co, died at Jackson on May 19. He had been manager at Winona for 12 years.

Emmet G. Schaub, 64, in charge of Ohio Power Co's statistical department until his retirement in 1949, died May 29 at Canton. He headed the statistical department for 25 years.

Willard Henry Childs, 70, retired substation superintendent for Commonwealth Edison Co, died May 22 at Austin, Ill.

Felix H. Hand, general supervisor of the Hydro Electric Power Commission of Ontario, died in Toronto May 27. He had been associated with the commission for 25 years.

MANUFACTURERS and MARKETS



BOUND FOR AUSTRALIA is this steam condenser, part of a 5,000-kw "package" power plant ordered from Westinghouse International Co by the Sydney County Council. The big unit is shown being lowered to the deck of the S. S. Wangaratta at San Francisco. Australia has ordered a number of small prefabricated steam plants from the United States to supply power to its mushrooming, decentralized industries

Government's Aluminum Expansion Program Runs Into a 3-Way Snag

With a sharp pitchfork at your coat tails, you wouldn't care which of three prongs might reach you first—you'd just keep jumping. Government officials in charge of aluminum were getting ready this week to keep jumping.

Their expansion program has already felt the fork. They've been stuck by each of its three prongs—by the Celler Anti-Monopoly Committee, by lack of financing for new producers, and by shortage of power.

They're picking up Interior Secretary Oscar Chapman's new goal of 188,000 tons additional capacity and are jumping once more—hoping this time to escape all three. But on the record, their chance of getting pinked again looks better than fair.

The thing began five months ago when mobilization officials approved 446,000 tons of new production. Of that 54,000 tons has been impaled by lack of financing. Another 72,000 tons has had a long hunt for money. Until recently, an additional 85,000 tons was held up by lack of power. The Celler Committee said the whole 446,000-ton program was bogged down in confusion and sharply told the mobilizers to find some new producers next time.

Trouble is, the new producers which the mobilizers found to help with the first expansion drive, haven't got started and the three established producers have. Apex Smelting Co, gave up its 54,000-ton program, said it couldn't raise the necessary money because of government contract terms. Harvey Machinery Co, with 72,000 tons of capacity approved for a plant near Hungry Horse Dam in Montana, was still hunting money as its deadline for a decision on the government's offer neared. For Apex and Harvey, the government's terms included 100% amortization (contrasted to around 80% for the already-established producers), plus a guarantee to buy output for five years at the market price for pig.

Of the established producers that got shares of the original 446,000-ton expansion, Kaiser has taken the first steps at New Orleans to build 100,000 tons of capacity. Late next year would be the earliest it could get into production. Reynolds has 25,000 tons capacity in preparation at Jones Mill, Ark., with production scheduled for July. Its 75,000-ton project at Corpus Christi is underway, with a December-January target for production.

Will Select Companies

Interior Secretary Chapman will select the companies which will share in the new expansion of 188,000 tons a year. Add in the 54,000 tons Apex gave up, and his Defense Mineral Administration really has 242,000 tons of capacity to place.

There's no rush by the established producers to gobble up the new capacity. Kaiser has put in a plug for 100,000 tons. Alcoa is laying back.

On paper, Defense Minerals has plenty of capacity to tap for the 188,000 tons. Projects in its files are more than equal to the new production goal. Its job is to select companies which will satisfy the Celler Committee as new producers, which can get financing, and will locate in areas where power is available.

Likeliest new candidate for government aid is United Aluminum Co, which would like to operate with Gulf Coast gas. Its financing outlook looks solid to government officials, and its technical employees are highly rated. Independent Aluminum Co has been considered another strong contender, but it has counted on Bonneville electric power. Chapman's ruling regarding Kaiser's plans in the Northwest may cost Independent a share of the new capacity, unless he makes an exception to get a new company into the program.

Metal Prices
June 4, 1951

COPPER, Conn. V., lb	$ .24½
LEAD, N. Y., lb	.17
ZINC, prime Western, E. St. Louis, lb	.17½
TIN, Straits, qual. N. Y., lb	1.36
ALUMINUM, ingot, base price	.19
NICKEL, base price	.56½
STEEL, billets, Pitts., ton	56.00
STEEL, scraps, No. 1 heavy, Pitts., ton	45.00

GE Agrees to 9¢ Pay Boost for 40,000 Workers

General Electric Co has agreed to a nine-cents-an-hour wage increase for 40,000 United Electric Workers, independent. The increase, retroactive to March 15, needs the approval of the Federal Wage Stabilization Board to become effective.

The independent union, which originally demanded a 32¢-an-hour wage hike, called the 9¢ unsatisfactory, but said it was accepting the amount while continuing to press for certain other non-wage benefits for its membership. The present average wage is about $1.80 an hour.

The wage boost matched the nine cents recently granted to the rival CIO International Union of Electrical Workers, which has several thousand members in certain GE plants. UE represents about 40 plants.

IUE-CIO won its increase under an escalator clause in its contract, which calls for wages to go up or down according to the cost of living.

SALES ASSIGNMENTS

COMPANY STAFFS

Swartwout Co, Cleveland, has appointed A. P. Jeffery power plant equipment sales engineer for the Albany and Schenectady territory. His office will be in Albany.

Westinghouse Electric Supply Co has named William H. Bingham eastern district manager. His headquarters will be in Long Island City, N. Y. Bingham has been with Westinghouse Electric Supply since 1925. For the past 15 years he has been eastern district apparatus and supply sales manager. He will be succeeded by Edward W. Marek.

Westinghouse Electric Corp has appointed Wallace B. Strathdee and H. Raymond Benson to executive positions at its New England district headquarters. Strathdee has been named manager of the marine and industrial departments and Benson is the new manager of the transportation department. Both men have served their entire business careers with Westinghouse. In another appointment the company named Robert E. Ferry manager of the apparatus sales offices in Wheeling and Fairmont, West Virginia. He will make his headquarters at Wheeling.

REPRESENTATIVES

Ward Electric Co's Industrial Chrome Division has appointed three distributors for Chromaster and Chromasol. They are S. B. Roby Co, 208-214 South Ave, Rochester 4, N. Y. for the Rochester area; Syracuse Supply Co, 314 West Fayette St, Syracuse 1, N. Y., for the Svracuse area; and Logan Hardware & Supply Co, Huntington, W. Va., for West Virginia.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Alabama—Black Warrior Electric Membership Corp., Demopolis, 217 mi. rural distribution lines in Greene Co.

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, power house addn., $157,000; 2 incinerators at Los Angeles County General Hospital, $87,775. R. E. Shonerd, engr.

Calif., Oakland—Port of Oakland foot of Grove St., Oakland, furnishing, installing high intensity lighting and taxiway lighting at Oakland Municipal Airport. $140,000. Plans deposit $10.

D. C., Wash.—General Services Admin., Pub. Bldg. Serv., General Services Bldg., Wash., D. C., power plant remodeling at National Bureau of Standards, Plans deposit $7.50.

Mo., Overland (St. Louis 14, P. O.)—Baldor Electric Co., 4300 Duncan Ave., St. Louis, Zone 10, plant on 10 acre tract on Warson Rd. at Rock Island R. R. tracks. $100,000.

Mo., St. Louis—Wagner Electric Corp., 6400 Plymouth St., St. Louis, Zone 14, processing plant for mfg and packaging of hydraulic brake fluid used in automotive industry on 52 acre tract bordering Hazelwood and Lally Aves, near Berkeley City and Village of Hazelwood.

Nev., Las Vegas—U. S. Atomic Energy Comn., Los Alamos, N. M., power house, Inv. No. 291-51-138. Approx. $500,000.

Nev., Las Vegas—U. S. Atomic Energy Comn., Los Alamos, N. M., misc. bldgs., alternate test site. Inv. No. 291-51-139. $1,000,000-$2,500,000. Plans deposit $50.

Nev., Las Vegas—U. S. Atomic Energy Comn., Los Alamos, power and signal electric circuits, approx. 20 mi. Inv. No. 291-41-140. $200,000-$300,000. Plans deposit $50.

O., Warren—Packard Electric Div. of General Motors Corp., 8-127 General Motors Bldg., Detroit, Mich., factory expansion, construct 40,000 sq. ft. addn. to Plant 8 and 108,000 sq. ft. new building for employee facilities and administration, addnl. parking areas; rearrangement of present facilities. $1,500,000.

Tex., Amarillo—U. S. Eng., P.O. Box 61, Tulsa 2, Okla., electrical distr. sys., (Contr. 2). $75,000.

Tex., Amarillo—E. S. Cowie Electric Co., 700 Van Burne St., masonry electric shop, concrete slab fdn. $117,535.

Low Bidders & Contracts Awarded

California—Menzel & Kimball, Hotel Lorenz, Redding, Calif. Contract Awarded. $125,810. Transmission line and sub-station 8 mi. north of Alturas and near Cedarville, Modoc Co. Surprise Valley Electrification Corp. of Alturas, Office of Cooperative, Alturas, Calif. Bids May 15, awarded May 17.

Calif., Los Angeles — Rains-McLellan Corp., 3544 John St., Los Angeles, Calif. Low Bidder. $150,000. Electrical Distr. Station No. 55, Dpt. Water & Power, 207 S. Broadway, Los Angeles, Calif. Bids May 22.

Ill., Bloomington—Berenz & Sons Asphalt Co., 500 E. Bell St., Bloomington, Ill. Low Bidder. $122,378, delivery, installation electric equipment for runway lighting system, beacon illuminated wind cone and obstruction lights at airport, City, Bloomington, Ill. Bids May 18.

Ill., Great Lakes—Coath & Goss, Inc., 5103 W. Lake St., Chicago 51, Ill. Contract Awarded. $631,000, principal power plant. Dpt. Navy, Great Lakes Naval Training Station, Great Lakes, Ill.

Ky., Louisville—Louisville Gas & Electric Co., 311 W. Chestnut St., Louisville, Ky. Own Forces. $90,000,000. Cane Run Steam Generating Power Plant, Pioneer Eng. Co., 231 LaSalle St., Chicago, Ill., consult. engr.

Missouri, Newton — Chatham-Walker, West Plains, Mo. Low Bidder. $505,000. 142.59 mi. rural distr. lines, 45.19 mi. line changes in Jasper, McDonald, and Newton Countines, Proj. Mo. 48N. New Mac Electric Co-operative, Neosho, Mo. Bids May 16.

Oregon—Olson Electric Co., Vancouver, Wash. Contract Awarded. $79,755. Construct Detroit sub-station, Inv. 5759. Bonneville Power Admin., 827 N. E. Oregon St., Portland, Ore. Bids May 17.

Tex., Marathon—George H. Storey, Box 660, Alpine, Tex. Low Bidder. $116,785, est. $90,000. Utility Bldg., power house, No. 33-48. National Park Service, Dpt. Interior, Region 3, Santa Fe, N. M. Bids May 8.

Wash., Richland — Bumstead-Woolford Co., Smith Tower, Seattle, 4, Wash. Low Bidder, $563,380, rehabilitate steam plant in 300 area at Hanford Works. Atomic Energy Comn., 1901 Constitution Ave. N.W., Wash., D. C.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Calif., El Segundo—Douglas Aircraft Co., Inc., 827 Lapham St., 1 story, steel frame, factory. $2,500,000.

Calif., Los Angeles—Bd. Regents, University of California, 45 Hilgard Ave., medical center, $15,500,000. Revised bid date. Wilton Becket & Assoc., 5657 Wilshire Blvd., Los Angeles, archts.

Colo., Denver—National Trailways Bus System, 17 and Tremont Sts., bus terminal, incl. coffee shop, cocktail lounge, etc., at 17 St., and Broadway. $1,500,000.

Conn., Hartford—The Aetna Life Insurance Co., 151 Farmington Ave., plans by Ebbets, Frid & Prentice, 862 Asylum Ave., Hartford, 6 story, 125x175 ft. masonry, 135,000 sq. ft., home office bldg. wing addns., Segourney St. $3,500,000.

Ill., Chicago—Community Development Trust, 39 S. State St., Chicago 3, Ill., plans by Holsman, Holsman, Klekamp & Taylor, 39 S. State St., 12 story 120-unit, apartment bldg., incl. 2 tower co-operative store, office, skip stop elevators 100 E. Erie St., Chicago, Zone 11. $2,000,000.

Ky., Owensboro—Glenmore Distilleries, Inc., Owensboro, distillery addn. $3,500,000.

Minn., St. Paul Park—Northwestern Refining Co., Elmer Erickson, secy-treas., St. Paul Park, refining plant alongside existing plant. $2,000,000.

O., Dayton—Delco Products Div., General Motors Corp., 329 E. 1 St., factory, on 306 acre tract, at southeastern edge of city. $5,000,000.

Pa., Phila.—The Budd Co., 24 St. and Hunting Park Ave., mfg. plant. Approx. $1,000,000.

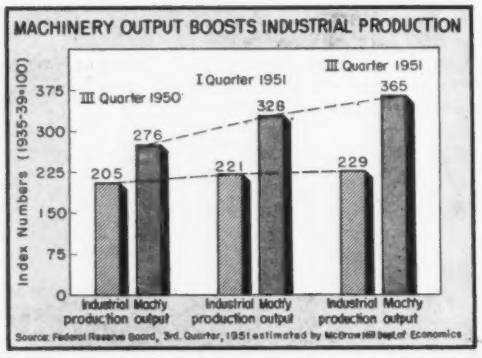
Wis., Milwaukee — Plankington Trust, 161 W. Wisconsin Ave., Zone 3, 2 story store addn., $2,500,000. J. C. Penney Co., Inc., lessee.

Low Bidders & Contracts Awarded

Calif., Maywood—The Austin Co., 777 E. Washington St., Los Angeles, Calif. Contract Awarded. $1,000,000. 1 story, steel frame, brick, mfg. plant. General Refractories of Philadelphia, 3201 Fruitland Ave., Vernon, Calif. Awarded Mar. 1.

Calif., Pleasanton—The Four Companies, Inc., San Francisco, Calif. (joint venture of Barrett & Hilp, 918 Harrison St., Macco Corp., Guadalupe Valley, Brisbane; Theo G. Meyer & Sons, Quint and Custer Sts.; Chas. L. Harney Inc., 575 Berry St., all San Francisco, Calif.) Contract Awarded. Total est. $33,058,000, barracks, mess halls and installing utilities of Air Force Indoctrination Center, Camp Parks. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Awarded May 22.

Electrical Business Outlook



INDUSTRIAL PRODUCTION INDEX will swing up in third quarter, chiefly because machinery producers are so busy

Industrial Production to Soar

Industrial production will rise sharply in the second half of 1951. The Federal Reserve index will average close to 230 in the third quarter, compared to 222 recently. By the end of the year, the index should be pushing 240.

That sounds like a brave forecast at a time when retail trade is lagging and commodity prices are dropping, to say nothing of a diving stock market. But actually the stage is pretty well set for the production rise. Even peace negotiations in the Far East—which worry the markets—won't make any difference in the trend of industrial output.

Defense Orders Are the Reason

Why not? Because defense orders—for weapons and for capital goods to make the weapons—have already been placed. Materials are already moving. The next few months will see a big rise in weapons production and a spectacular rise in machinery production. Even if new military orders slowed down tomorrow, production would keep going up for the rest of 1951.

Output of munitions, in the limited sense, still won't occupy many plants this summer. The big jump will come in machinery. From the first quarter to the third quarter, the machinery component of the Federal Reserve index will be up more than 10%. This will probably be the peak period for new plant and equipment installations.

The Controlled Materials Plan will help production in the capital goods industries. It will assure them the necessary metals to keep lines moving rapidly. But it will pinch the consumer durables people. Auto output, for example, is scheduled to dip 15% from the current rate in the third quarter. Appliances will be hit too.

The second half boom won't be spread evenly, as in 1950. In a few areas, where the plants are concentrated on consumer goods, there will be a temporary drop in activity. Not everyone has defense work to turn to. There have already been spotty layoffs in the TV and furniture industries. This will be offset by gains in the heavy industrial sectors.

In the soft goods lines—food, textiles, apparel, and shoes—production will hold steady. The little recession in textiles is about over. But inventories are high in all these lines. Manufacturers aren't likely to top their recent peak operating rates for some time.

Big Power Users Step Up Activity

The basic industries which are the heavy power consumers will show big gains over last year in the months ahead. In every case, output is moving up steadily, as new capacity comes in.

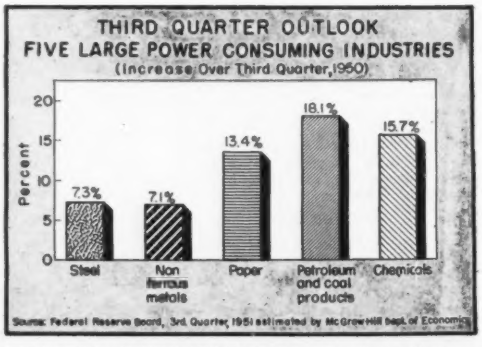
Steel is the prize example. Capacity was 104 million ingot tons at the beginning of this year. It's about 107 now and will be 110 by the year-end. Production in the third quarter will run 7% higher than in 1950.

It's the same story in the non-ferrous metals—another 7% gain, but concentrated more in fabricating activity than in refining. Paper makers are going on a longer work week. Their third quarter output should be 13% above last year.

Really big increases are expected in production of petroleum and chemical products—15% to 18% higher than in the third quarter a year ago. Much of the gain will continue to be in the Southwest, where more and more new plants are scheduled. The chemical companies are counting on oil and gas as the materials for increased output.

The petroleum-chemicals boom is one of the clearest regional trends. Another should be a recovery in the important textile and furniture industries of the Southeast. The Midwest and Far West will benefit if crops for food processing are as big as the Agriculture Department expects.

But the strongest trends are both in the industrial region around the Great Lakes. And the trends are mixed—a drop in output of consumer durables, and the greatest boom in peacetime in production of machinery.



WAY ABOVE FIGURES FOR 1950. The situation is the same for all major power-producing industries in the United States

is your wiring like a camel's back?

ANACONDA "POWER UP" CAMPAIGN HELPS UTILITIES

HERE IS another advertisement in the Anaconda "POWER UP — And Be Prepared" campaign urging industry to make more efficient use of the power it buys from you. This Anaconda campaign is also being directed to contractors and wholesalers.

As in our previous industry-wide campaigns, we again offer advertisement reprints, imprinted with your letterhead and message —for mailing to your industrial power customers.

9 out of 10 wiring systems are overloaded

That next piece of equipment you install may be the straw that breaks the back of your plant wiring system—if that wiring is inadequate and obsolete.

Inadequate wiring systems cost money. Every day they're causing cable failures, voltage drops and slowed production in 9 out of every 10 industrial plants. A modern wiring system gives you the full power you pay for . . . and protects you against possible power breakdowns.

Safeguard your production. A strong national defense requires full-scale production and modern up-to-the-minute power wiring systems that can deliver full power.

Make plans to survey your plant wiring system. Call in your utility, plant or consulting engineer or electrical contractor today. And by all means send for your free copy of *"Power Up—And Be Prepared."* It's a complete guide to modern plant wiring. Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

the right cable for the job **ANACONDA®**

WIRE AND CABLE

One Voltage Rating

FOR All 15 KV SYSTEMS

THE NEW DESIGN of Allis-Chalmers ⅝% step voltage regulators gives the fullest use ever possible for a single unit. One unit is flexible enough to operate over the entire range from 11,000 to 14,400 volts. Now one regulator can have more locations on your system.

The new, increased coverage means you can determine regulator requirements easily. Expensive voltage studies to determine the possible future voltage requirements of a new regulator are no longer needed.

Improved Delivery

Delivery time has been cut too because our production is now concentrated on the new flexible unit. Also important, vital raw materials will be conserved for use on this new single model rather than stocked for use in several models of limited application.

EEI—NEMA System Voltages

With the new design, one regulator covers the EEI—NEMA Joint Committee Nominal Systems Voltages of 12,000, 12,470, 13,200, and 14,400 volts. The regulator can operate with: *INPUT* minimum 10,200 volts, maximum 15,180 volts and *OUTPUT* minimum 10,800 volts, maximum 15,180 volts.

To get the complete story on how this new, re-designed AFR regulator can cover all loading conditions for your 15 kv feeders, call your nearest Allis-Chalmers dealer, or write to Allis-Chalmers, Milwaukee 1, Wisconsin.

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